Ranpak Corp.

Ohio Manufacturing Extension Partnership

Ranpak Corporation Develops Revolutionary Sensor-Based System

Client Profile:
Ranpak Corporation, founded in 1979, manufactures packing equipment and supplies. The plant, which employs less than 500 people, is located in Concord Township, Ohio and has annual sales of $100 million.

Situation:
Ranpak Corporation's new owners had a strong desire to grow the business by introducing a steady stream of new products into the marketplace. Ranpak began focusing its efforts on the development of a Void Fill Measuring System (VFMS), which would automatically determine the amount of packing material needed to fill a void in the top of a box. This type of system would help Ranpak's clients reduce material cost, packaging material, and labor costs by letting management control the amount of material used for packaging. Previous attempts at developing a VFMS had been unsuccessful, but Ranpak's revived emphasis on new product development brought the project back to the forefront. Ranpak wanted a working prototype ready for introduction at the upcoming Packaging Machinery Manufacturers Institute (PMMI) Pack Expo International Show in Chicago--only five months away. The company realized it did not have the resources to develop the new product in-house, and approached CAMP, Inc. (CAMP), a NIST MEP network affiliate, for assistance.

Solution:
CAMP's first step was to establish the fundamental technology to be incorporated in the VFMS. By assembling a multi-discipline development team of engineers, CAMP thoroughly explored and evaluated several sensing technology and data acquisition concepts and their effective integration. The team focused on laser technology, which held the greatest potential for meeting the VFMS standards.
The CAMP team generated several alternative concepts using laser technology and performed physical experiments with each concept to evaluate performance. The engineers developed data acquisition software appropriate for assessing each concept during the experiments. After selecting the technology and software to be incorporated into the VFMS, CAMP's engineers developed a functional VFMS prototype. The work included software development and electrical and mechanical hardware integration.
After overcoming several obstacles, CAMP met Ranpak's tight deadline with an extra two days to test the new system at Ranpak headquarters. The resulting

VFMS prototype, the AccuFill, was fully integrated with Ranpak's FillPak equipment and unveiled at the PMMI Expo in November 2002.

Results:
Developed working prototype of the AccuFill VFMS System.
Targeting a material usage reduction of 10 to 25 percent on average per client.
Increased competitive edge and market share.

Testimonial:
"We'd love to work with CAMP again. They met our goals, objectives and, most importantly, our timeline. They solved our problems more efficiently than we could have done in-house and delivered a complete final product."

Mark Dawson, Director of Marketing